Operating Manual

English

ALADIN® ONE

UWATEC®

SWISS MADE BY UWATEC AG

Safety considerations

You must carefully read and understand this entire manual before using your Aladin® *ONE*.

Diving has many inherent risks. Even if you follow the instructions of this manual in a careful manner, it is still possible that you may be seriously injured or die from decompression sickness, oxygen toxicity or some other inherent risk of scuba with Nitrox or compressed air. Unless you are fully aware of these risks and are willing to personally accept and assume responsibility for those risks, do not use Aladin® *ONE*.

Guidelines for the use of Aladin® *ONE*:

The following guidelines for using Aladin® *ONE* are derived from the latest medical research and the recommendations of the American Academy of Underwater Sciences for diving with diving computers. Following these guidelines will greatly increase your safety while diving, but cannot guarantee that decompression sickness or oxygen toxicity will not occur.

- Aladin® *ONE* is designed for dives with Nitrox (max.50%O_2) and compressed air (21%O_2) only. Do not use Aladin® *ONE* for dives made with other mixed gases.
- It is absolutely necessary to check the set mixture before each dive and to compare it to the gas mixture currently used. Always remember: setting an incorrect mixture carries an inherent risk of decompression sickness and/or oxygen toxicity! Maximum deviation from the measured mixture must not exceed 1% O_2. An incorrect gas mixture can be lethal!
- Only use Aladin® *ONE* with open circuit breathing systems. Aladin® *ONE* must be set for a determined gas mixture.
- Only use Aladin® *ONE* for diving with an independent breathing apparatus. Aladin® *ONE* is not designed for long term exposures with Nitrox.
- Always observe the visual signals. Avoid situations of increased risk which are marked with a warning sign in this operating manual.
- Aladin® *ONE* has a ppO_2 warning. The limit is set at 1.4 bar ppO_2max.
- Frequently check the "oxygen clock" (CNS O_2). Ascend and finish the dive if the CNS O_2 exceeds 75%.
- Never dive deeper than the Maximum Operating Depth (MOD) pertinent to the gas mixture in use.
- Always check the diving limits considering the oxygen content and standard sports diving procedures (decompression sickness, oxygen toxicity).
- In accordance with the recommended maximum diving limit of all instructional agencies, do not dive deeper than 40 metres/130 feet.
- The danger of nitrogen narcosis has to be taken into consideration. Aladin® *ONE* gives no warning about this.
- On all dives, with or without dive computer, make a safety stop for at least 3 minutes at 5 metres (15 feet).
- All divers using dive computers to plan dives and indicate or determine decompression status must use their own computer, which they take with them on all dives.
- If Aladin® *ONE* fails at any time during the dive, the dive must be terminated, and appropriate surfacing procedures (including a slow ascent and a 3 to 5 minute safety stop at 5 metres /15 ft) should be initiated immediately.
- Comply with the ascent rate and carry out any decompression stop required. If the computer should fail for any reason, you must ascend at a rate of 10m (30 feet) per minute or less.
- On any given dive, both divers in a buddy pair must follow the most conservative dive computer for that particular dive.
- Never dive without a buddy. Aladin® *ONE* does not substitute for a dive buddy.
- Only make dives that are appropriate to your level of dive training. Aladin® *ONE* does not increase your knowledge of diving.
- Always dive with back-up instruments. Make sure that you always use back-up instrumentation including a depth gauge, submersible pressure gauge, digital bottom timer or dive watch, and have access to decompression tables whenever diving with a dive computer.

- Avoid repeated ascents and descents (yo yo diving).
- Avoid repeated heavy workload while at depth.
- Plan the dives to be shorter if they are made in cold water.
- After finishing the decompression or at the end of a no-stop dive, the final stage of the ascent should be as slow as possible.
- You MUST be familiar with all signs and symptoms of decompression sickness before using Aladin® *ONE*! Seek IMMEDIATE treatment for decompression sickness should any of these signs or symptoms occur after a dive! There is a direct correlation between the effectiveness of treatment and the delay between the onset of symptoms and the treatment for decompression sickness.
- Only dive with Nitrox after you have been thoroughly instructed by a recognised institution.

Repetitive dives

- Diving with Nitrox: Make sure your surface interval is long enough (just like diving with compressed air). Plan for a minimum surface interval of two hours. Oxygen, too, needs sufficient time to leave the body.
- Match gas mixture to the intended dive.
- Do not attempt a repetitive dive if the microbubble warning is visible on the display.
- Plan a day without diving once a week.
- If you have to change computers, wait at least 48 hours before carrying out your next dive.
- Diving after a reset of the remaining saturation (reset, see page 12, or battery replacement, see page 21) may lead you into potentially hazardous situations which could result in death or serious injury. After a reset of the remaining saturation do not dive for at least 48 hours.

Altitude and diving

- Do not dive at altitudes higher than 4000m (13000 feet).

Flying after diving

- After diving, wait at least 24 hours prior to flying.

CE

Aladin® *ONE* dive instrument is a personal protective equipment in compliance with the essential safety requirements of the European Union directive 89/686/EEC. RINA SpA, Via Corsica 12, I-16128 Genoa, notified body no. 0474, have certified the conformity with the European Standard EN 13319:2000.

EN13319:2000 Diving accessories - Depth gauges and combined depth and time measuring devices - Functional and safety requirements, test methods. Any information on decompression obligation displayed by equipment covered by this standard is explicitly excluded from its scope.

Introduction

Congratulations on purchasing Aladin® *ONE* and welcome to UWATEC. From now on you will enjoy the assistance of the most extraordinary dive computer - equipped with UWATEC's most innovative technology - while diving.
We thank you for choosing Aladin® *ONE* and we hope you will enjoy safe dives in the future! Further information on UWATEC dive computers and other products by UWATEC can be found on our web page at www.uwatec.com.

Safety considerations
Dive computers provide divers with data; they, however, do not provide the knowledge how this data should be understood and applied. Dive computers cannot replace common sense! You must therefore carefully read and understand this entire manual before using your Aladin® ONE.

Important remarks concerning signal words and symbols

This operating manual makes use of the following icons to indicate especially important comments:

Remarks Information and tips which are important for optimal use of the functions of Aladin® *ONE*.

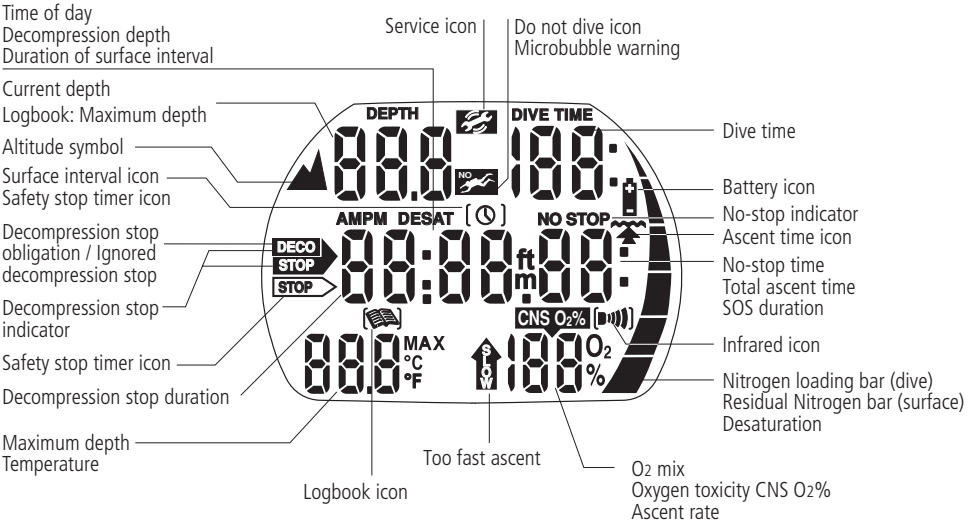
Danger!

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

The following symbols are used in the operating manual:

Flashing display -> Page reference e.g. ->10

Quick reference



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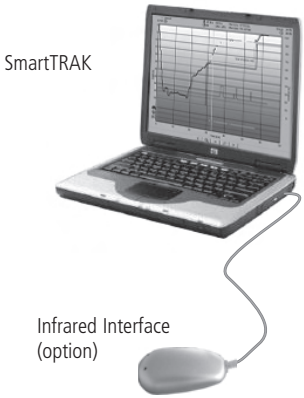
II System and operation

1 System description

Aladin® *ONE* displays all important dive and decompression data.
Aladin® *ONE* has a data memory which stores the dive data. The data can be transmitted with an infrared interface (IrDA) and SmartTRAK software to a Windows® personal computer. This software must also be used to configure Aladin® *ONE*.
SmartTRAK software CD is included with the Aladin® *ONE* Package. Infrared interfaces are available in PC stores. A list of recommended interfaces is available on the UWATEC homepage (www.uwatec.com).



2 Operation

2.1 Water contacts

On submerging in water the water contacts switch on Aladin® *ONE* automatically.
On the surface you can switch on the Aladin® *ONE* by "bridging" the water contacts with a moistened finger.

2.2 SmartTRAK

You must use SmartTRAK to configure Aladin® *ONE*, transfer dive data to a personal computer and graphically display the data. To start the communication, place Aladin® *ONE* so that its infrared window is in front of the infrared interface, then select "Dive Computer Settings" under "OPTIONS" on the main menu bar.
If Aladin® *ONE* detects an infrared device within range (((•))) appears.

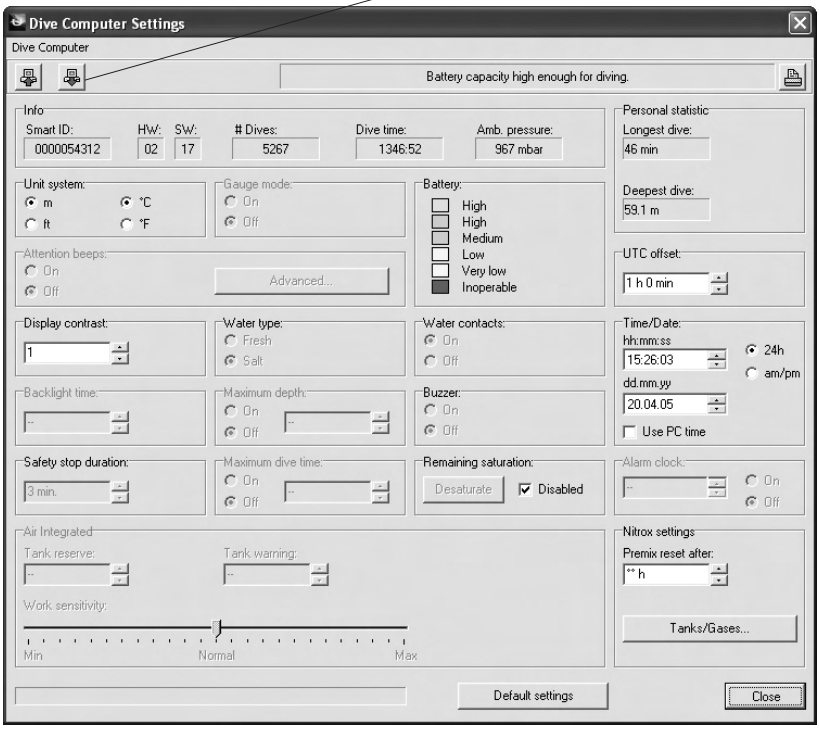
The following settings may be changed with SmartTRAK:

Setting	Range	Default	Page
• Setting the gas mixture	21-50% O_2	21% O_2	->11
• Time limit to reset the O_2% mix to air	no reset / 1 - 48 hrs.	no reset	
• Unit system	metric/imperial		
• Reset desaturation	on / off	no reset	->12
• UTC (Universal Time Change) zone	±13 hrs., increments: 15 min.		
• Time of day	hours:minutes	GMT	->8
• 24 or AM/PM setting			
• Date			
• Display contrast	1 (low) -12 (high)	4	

The following data may be recalled with SmartTRAK:

• Number of past dives	✓	• Dive profile	✓
• Total duration of dives	✓	• Logbook	✓
• Deepest dive	✓	• Temperature curve	✓
• Longest dive	✓	• Alarms and attention messages	✓
• Atmospheric pressure	✓	• Battery condition	✓

When making any changes to the settings via SmartTRAK, you must press the "Write" icon for the changes to take effect.



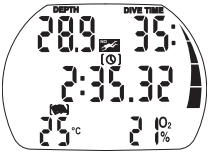
2.3 Switching on the display

- automatically, on submerging in water or when adaptation to atmospheric pressure is necessary;
- manually, by "bridging" the water contacts with a moistened finger.

Afterwards the display shows the time of the day, the O_2 mix and the temperature. This display is called **time of day display**.

Time of day display

If there is a remaining saturation from the last dive, Aladin® *ONE* displays the logbook information of the last dive (depth, dive time, temperature, O_2%), the surface interval, the "do not dive" icon (if applicable) and the residual nitrogen loading as a bar graph ->18.
If there is a remaining saturation from a change of altitude, Aladin® *ONE* displays the mountain symbol, the adaption time as a bar graph and the time interval since the change in altitude class.



Logbook information

WARNING

Aladin® *ONE* does not display a No-Fly time. To prevent decompression sickness or death, you must wait at least 24 hours after your last dive before flying.

When Aladin® *ONE* is in state of rest no information is displayed but the atmospheric pressure is continuously monitored. If a change in altitude range is detected, Aladin® *ONE* switches on for 3 minutes automatically ->20.

2.4 Switching off the display

On the surface Aladin® *ONE* switches off automatically after 3 minutes without operation.

2.5 Battery warning and battery alarm

When the computer senses that the battery needs to be replaced, the steady battery symbol appears at first (warning). This allows you to do some more dives, but you should change the battery as soon as possible.
When the battery reaches a dangerously low level, the battery symbol starts to blink (alarm).

Flashing battery alarm

WARNING

- Risk of computer malfunction!
  The battery symbol blinks, on the surface and in dive mode, to alert the diver of a dangerous situation: the battery may not have enough energy to finish a dive.
  Do not dive or finish the dive and replace the battery ->21.
- Replace the battery when the steady battery symbol appears ->21!

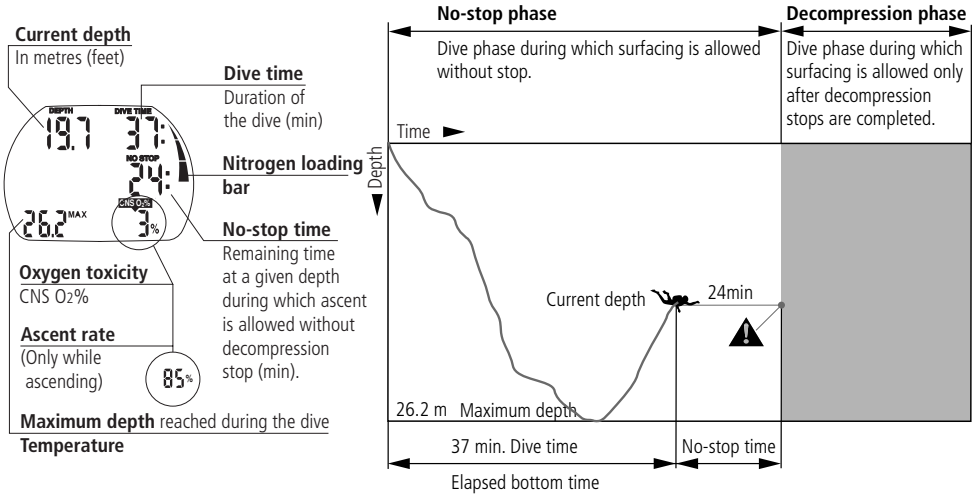
The battery condition can be checked with SmartTRAK.

The temperature influences the battery performance. In cold water it is lower than in warm water. If the battery shows the steady battery symbol on the surface, it is possible for it to start flashing during the dive.

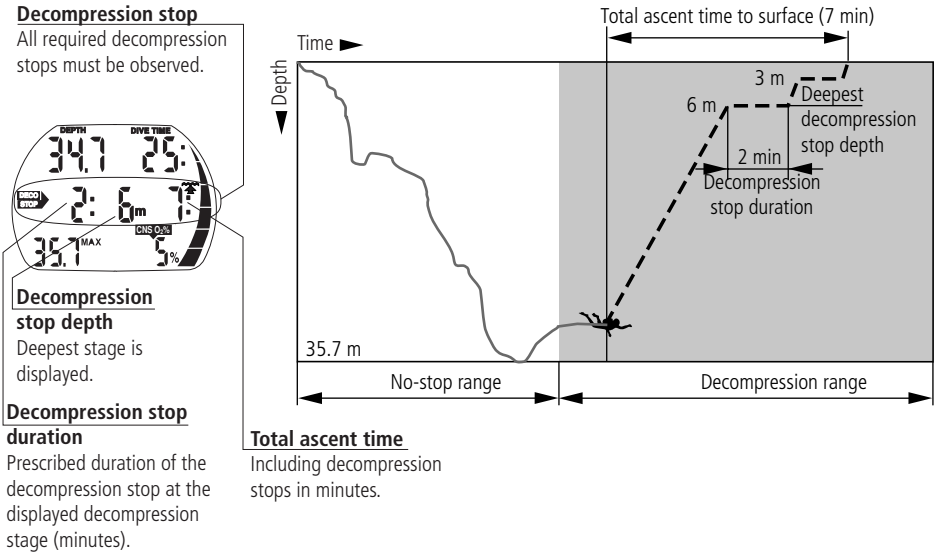
1 Terminology / Symbols

The information on the display of Aladin®*ONE* varies depending on the kind of dive and the dive phase.

1.1 General terminology / Display during no-stop phase



1.2 Display during decompression phase



1.3 Nitrox information (O_2 information)

For dives with compressed air in normal recreational diving, nitrogen is the decisive gas for the decompression calculations. When diving with Nitrox, the risk of oxygen toxicity rises with the increase of the fraction of oxygen and the increase of depth and can limit dive time and the maximum depth. Aladin® *ONE* includes this in the calculations and displays the necessary information:

<O_2% MIX>

Fraction of oxygen: The fraction of oxygen in the Nitrox mixture can be set with SmartTRAK between 21% (normal compressed air) and 50% in 1% increments. Your selected mix will be the basis for all calculations.

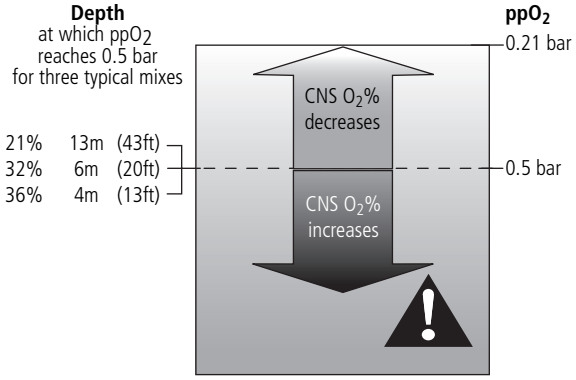
$ppO_{2\ max.}$

Maximum allowed partial pressure of oxygen: the higher the fraction of oxygen in the mixture, the shallower the dive depth at which this value of the partial pressure of oxygen is reached. The depth at which ppO_2 max. is reached is called Maximum Operating Depth (MOD).
When you enter the settings for the gas mixture with SmartTRAK, SmartTRAK will display the corresponding MOD. Aladin® *ONE* warns the diver visually once the depth is reached at which the ppO_2 reaches the maximum allowed value ->15.

The setting of ppO_2 max. is 1.4 bar.

<CNS O_2>

Oxygen toxicity: With the increased percentage of oxygen, the oxygen in the tissues (especially in the central nervous system (CNS)) becomes important. If the partial pressure of oxygen rises above 0.5 bar, the CNS O_2 value increases, if the partial pressure of oxygen is below 0.5 bar, the CNS O_2 value decreases. The closer the CNS O_2 value is to 100%, the closer the limit where symptoms can occur ->15.



WARNING

Nitrox diving may only be attempted by experienced divers after proper training from an internationally recognized agency.

2 Attention messages and alarms

Aladin® *ONE* draws the diver's attention to certain situations and warns the diver of unsafe diving practices. Attention messages and alarms are visual only.

WARNING

Serious injury or death may result from failing to immediately respond to alarms given by Aladin® *ONE*.

2.1 Attention messages

Attention messages are communicated to the diver visually by symbols, letters or flashing figures.

Attention messages come up in the following situations (more information can be found on the listed pages):

	Page
• Maximum Operating Depth / max. ppO_2 is reached	15
• Oxygen toxicity reaches 75%	15
• No-stop time less than 3 minutes	16
• Low battery warning	8

2.2 Alarms

Alarms are given to the diver visually by flashing symbols, letters or figures.

An alarm occurs in the following situations (more information can be found on the listed pages):

	Page
• Oxygen toxicity reaches 100%	15
• Ignored decompression	17
• Exceeding the prescribed ascent rate	14
• Low battery alarm	8

3 Preparation for the dive

Aladin® *ONE* is set to 21% oxygen (air) from the factory. If you wish to change this or any other setting, you need to do so using the SmartTRAK software and the infrared interface. Chapter III describes the most common settings. On the next page you will find an overview with all possible Aladin® *ONE* settings and page references.

3.1 Setting the gas mixture

WARNING

Before every dive and after changing the tank, make sure that the settings for the gas mixture correspond with the current mixture used. An incorrect setting causes Aladin® *ONE* to miscalculate this particular dive. If the fraction of oxygen is set too low this can lead to oxygen poisoning without warning. If the value is set too high decompression sickness may occur. Inaccuracies in the calculations are carried over to repetitive dives.

The setting of the gas mixture can be changed only via SmartTRAK.

- After changing the gas mixture with SmartTRAK you have to click in the top row on the "write" icon, otherwise the setting will not be written to the Aladin® *ONE*.
- The time to reset the O_2% mix to air can be set with SmartTRAK between 1 and 48 hours or to "no reset" (default).

3.2 Preparation for the dive and function check

Check the display:
Switch on Aladin® *ONE* by bridging the water contacts and check the test display: Are all elements of the display activated? Do not use Aladin® *ONE* if the display does not show all elements.

WARNING

Check the displayed O_2% mix:
It is absolutely necessary to check the set mixture before each dive and to compare it to the gas mixture currently used. Always remember: setting an incorrect mixture carries an inherent risk of decompression sickness and/or oxygen toxicity! Maximum deviation from the measured mixture must not exceed 1% O_2. An incorrect gas mixture can be lethal!

3.3 Overview Aladin® *ONE* settings

Configure Aladin® *ONE* with SmartTRAK according to your needs.

Setting	Range	Default	Page
• Setting the gas mixture	21-50% O_2	21% O_2	->11
• Time limit to reset the O_2% mix to air	no reset / 1 - 48 hrs.	no reset	
• Unit system	metric/imperial		
• Reset desaturation	on / off	no reset	->12
• UTC (Universal Time Change) zone	±13 hrs., increments: 15 min.		
• Time of day	hours:minutes	GMT	->8
• 24 or AM/PM setting			
• Date			
• Display contrast	1 (low) -12 (high)	4	

UTC (Universal Time Change) zone: this setting allows you to set the watch to a new time zone without affecting the actual time setting.

Resetting the remaining saturation

WARNING

Diving after a reset of the remaining saturation may lead you into potentially hazardous situations which could result in death or serious injury.
After a reset of the remaining saturation do not dive for at least 48 hours.

If you dive after resetting the remaining saturation the computer will miscalculate your decompression, which may result in serious injury or death.
Reset the remaining saturation only if you know you will not be diving, flying or going to higher altitude for the next 48 hours.

Resetting the desaturation should only be done when there is a valid reason, e.g. loaning the computer to somebody who has not dived in 48 hours or more. When the computer itself has remaining saturation you must assume full responsibility for the consequences of resetting the remaining saturation.

4 Functions during the dive

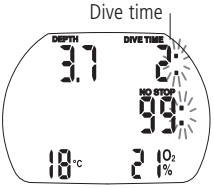
4.1 Immersion

After immersion, starting at a depth of about 0.8 m (3 ft), all diving functions are monitored, i.e. depth and dive time displayed, maximum depth stored, saturation of tissues calculated, no-stop time or decompression prognosis determined, ascent rate controlled and displayed and the correctness of the decompression procedure supervised.

4.2 Phosphorescent display

Aladin® *ONE* is equipped with a phosphorescent display. To excite the phosphorescence, shine your dive torch onto the display for a few seconds. The display will glow for about one minute depending on the strength of your dive torch and how close it was held to the display.

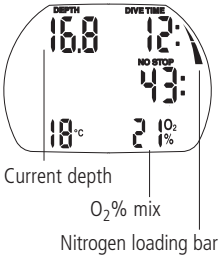
4.3 Dive time



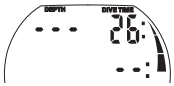
The whole time spent below a depth of 0.8m (3 feet) is displayed as dive time in minutes. The time above 0.8m (3 feet) is counted as dive time only if the diver descends again below 0.8m (3 feet) within 5 minutes.
While the dive time is running, the colons on the right of the figures are flashing in one second intervals. Maximum dive time displayed is 199 minutes.

If a dive lasts longer than 199 minutes the dive time display starts again at 0 minutes.

4.4 Current depth / O_2% mix



Current depth is given in 10 cm increments (1 foot).

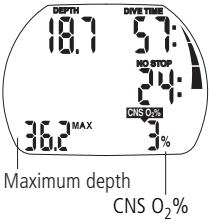


At a diving depth of less than 0.8 m (3 ft) the display shows "– – –".

The O_2% mix is diplayed as long as CNS O_2% = 0 and no ascent speed is indicated.

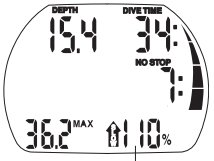
Depth measurement is based on salt water. Therefore, Aladin® *ONE* shows a slightly shallower depth than actual when diving in fresh water. No calculation however is affected.

4.5 Maximum depth / Temperature



In the lower left corner of the screen Aladin® *ONE* displays the water temperature and the maximum depth alternating every 4 seconds.
Maximum depth is only displayed if it exceeds the current depth by more than 1 m (3 feet) (maximum depth indicator function).

4.6 Ascent rate



Ascent rate

Optimal ascent rate varies depending on depth between 7 and 20 m/min (23 and 66 ft/min). It is displayed in the lower right corner as a percent of the reference variable ascent rate.

WARNING

If the ascent rate is greater than 100% of the set value, the black arrow "SLOW" appears.
Reduce ascent rate.

WARNING

If the ascent rate exceeds 140%, the arrow "SLOW" starts flashing.
Reduce ascent rate.

WARNING

The prescribed ascent rate must be observed at all times! Exceeding the prescribed ascent rate can lead to microbubbles in the arterial circulation which can lead to serious injury or death due to decompression sickness.

- In case of an improper ascent Aladin® *ONE* may require a decompression stop even within the no-stop phase because of the danger of microbubble formation.
- The decompression duration necessary for the prevention of microbubbles can increase massively if the ascent rate is exceeded.
- From great depth a slow ascent may cause heightened saturation of tissues and an extension of both decompression duration and total ascent time. At shallow depth, a slow ascent may shorten the decompression duration.
- Display of the ascent rate has the priority over "CNS O_2".
- Excessive ascent rates for longer periods are entered in the logbook.

The following ascent rates correspond to the 100% value in Aladin® *ONE*.

depth (m)	<6	<12	<18	<23	<27	<31	<35	<39	<44	<50	>50
speed (m/min)	7	8	9	10	11	13	15	17	18	19	20
depth (ft)	<20	<40	<60	<75	<88	<101	<115	<128	<144	<164	>164
speed (ft/min)	23	26	29	33	36	43	49	56	59	62	66

4.7 Partial pressure of oxygen ($ppO_{2\ max}$) / Maximum Operating Depth (MOD)

Max. Operating Depth MOD

The maximum partial pressure of oxygen $ppO_{2\ max}$ (1.4 bar) determines the Maximum Operating Depth (MOD). Diving deeper than the MOD will expose the diver to oxygen partial pressures higher than the set maximum level.

WARNING

The MOD is a function of $ppO_{2\ max}$ and the mixture used. If during the dive the MOD is reached or exceeded Aladin® *ONE* displays the MOD (flashing) in the lower left corner.

Ascend to a depth shallower than the displayed MOD in order to diminish the danger of oxygen poisoning.

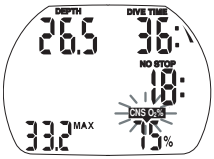
WARNING

The MOD should not be exceeded. Disregarding the warning can lead to oxygen poisoning.

4.8 Oxygen toxicity (CNS O_2%)

Oxygen toxicity

Aladin® *ONE* calculates oxygen toxicity from depth values, time and the gas mixture and displays it in the lower right corner. The toxicity is expressed in 1% increments of a maximum tolerated value (O_2 clock).
The symbol "CNS O_2" is displayed together with the percentage.



WARNING

The symbol "CNS O_2" flashes if oxygen toxicity reaches 75%.
Ascend to shallower depth to decrease oxygen loading and consider terminating the dive.

WARNING

When oxygen toxicity reaches 100%, "CNS O_2" and the percentage value flash.
Danger of oxygen toxicity!
Start procedure for terminating the dive.

- During the ascent, the display of the oxygen toxicity is replaced by the ascent rate. If the ascent is stopped, the display changes back to the indication of the CNS value.
- Aladin® *ONE* will display CNS O_2% values exceeding 199 % with 199 %.

4.9 Nitrogen loading bar graph

The nitrogen loading bar gives a graphical representation of how close to decompression you are. As you absorb nitrogen during the dive, more and more segments of the bar will light up. Depending on your depth, the segments can light up more or less rapidly.

1-3 segments (green area): you are safely within the no-stop range

4-5 segments (yellow area): you are approaching decompression. When the no-stop time drops below 3 minutes the 5 segments will start flashing.**

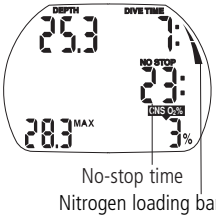
6 segments (red area): you now have mandatory decompression obligation(s) which you must observe before reaching the surface.

** Depending on your profile, the no-stop time may drop below 3 minutes before the upper 5 segments are lit. In this case, only those segments that are lit will flash.

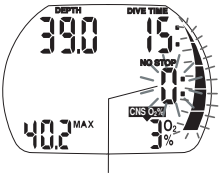
If you have entered decompression, the 6th segment will turn off as soon as you complete your last decompression obligation to indicate that you are no longer in decompression.

4.10 Decompression information

NO STOP and the no-stop time (minutes) are displayed if no decompression stops are necessary.



No-stop time
Nitrogen loading bar



No-stop time less than 1 minute

- No-stop display "99:" means remaining time of 99 minutes or more.
- No-stop time is calculated on line and influenced by the current water temperature

WARNING

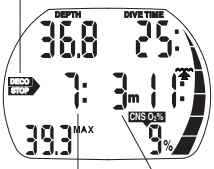
If no-stop time drops below 3 minutes, the no-stop value and the nitrogen loading bar begin to flash.
If no-stop time is less than 1 minute, the no-stop display shows the flashing value "0".
In order to prevent a decompression dive, ascend slowly until the no-stop time is 5 minutes or more.

WARNING

Dives that require decompression stops are not recommended.

Decompression values

Decompression obligation



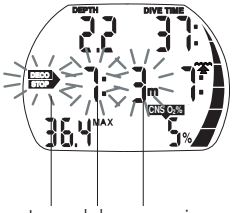
Decompression stop duration

Decompression depth

On entering the decompression phase, "NO STOP" disappears and the DECO STOP symbol appears. The nitrogen loading bar stops flashing and the 6th segment lights up (red area). The deepest decompression stage in metres (feet) is displayed and the decompression stop duration of the displayed stage appears in minutes. The display "7: 3m (10ft)" means that a decompression stop of 7 minutes at a depth of 3m (10ft) has to be made.

When a decompression stop has been completed, the next (shallower) decompression stop is displayed. When all decompression stops have been completed, the DECO STOP symbol extinguishes, "NO STOP" and no-stop time reappear.

Deco stop depths deeper than 27m (90 ft) are displayed as "– – : – – ".



Ignored decompression alarm

WARNING

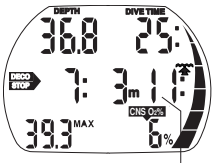
The decompression alarm is activated if the decompression stop is ignored. The arrow DECO STOP, the decompression stop duration and decompression stop depth begin to flash.

Due to the formation of microbubbles, decompression can increase massively if a decompression stop is ignored. When the surface is reached during the decompression alarm, the arrow DECO STOP, the decompression stop duration and decompression stop depth continue flashing, in order to point to the risk of a decompression accident. The SOS mode is activated 3 minutes after the dive if corrective action is not taken (->19).

If the total (cumulative) duration of the decompression alarm is longer than one minute, it is entered in the logbook.

Descend to the prescribed decompression stop depth immediately!

Total time of ascent



Total ascent time

As soon as decompression stops are necessary Aladin® *ONE* shows the total time of ascent. This includes the ascent time from the current depth to the surface and all decompression stop obligations.

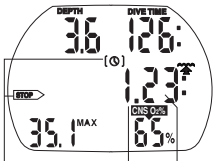
The total time of ascent is calculated on the basis of the prescribed ascent rate. Total time of ascent can be subject to change if the ascent rate is not ideal (100%).

Ascent time greater than 99 minutes is displayed as "– –".

WARNING

On all dives with Aladin® *ONE*, make a safety stop for at least three minutes at a depth of 5 m (15 feet).

4.11 3-minute safety stop timer



Safety stop icons

Remaining time span

Minutes

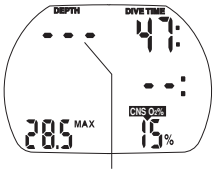
Seconds

The safety stop timer displays the time span a diver should spend at the safety stop depth at the end of the dive.

The timer is activated automatically when the diver, after having reached a depth of at least 10m (30ft), returns to a depth of 5m (15ft) while the no-stop time is 99 minutes. The safety stop timer will switch off automatically if the diver descends past 6.5m (20ft) but will restart from 3 minutes as soon as the diver returns above 5m (15ft).

5 Functions at the surface

5.1 End of a dive



Depth less than 0.8 m (3 ft)

After reaching the surface (<0.8 m/3 ft) Aladin® *ONE* remains in dive mode for 5 minutes. The delay allows for surfacing for a short period for orientation.

After 5 minutes the dive is closed and it is entered into the logbook.

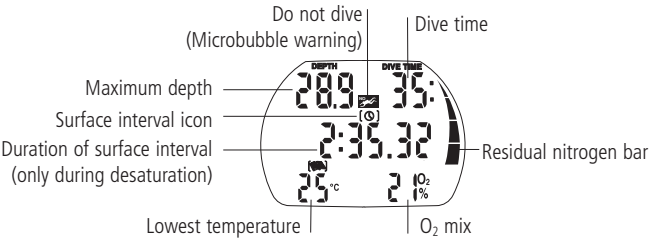
Aladin® *ONE* then displays the logbook of the dive and desaturation information ->18.

WARNING

For the calculations of the desaturation it is assumed that the diver breathes air while on the surface.

5.2 Logbook

5 minutes after a dive Aladin® *ONE* shows the logbook information of the dive (maximum depth, dive time, temperature, O_2%), the surface interval, the "do not dive" icon (if applicable) and the residual nitrogen loading as a bar graph. In addition to the screen logbook, Aladin® *ONE* records the profiles of about 25 hours of diving. This information can be transferred to a PC with the standard infrared interface (IrDA) and the Windows® software SmartTRAK. Note that a dive is recorded only if the dive time is longer than 2 minutes.
The display switches back to the time of day display (->8) after the computer is completely desaturated. If before complete desaturation the nitrox reset time elapses or the dive computer is interrogated via the infrared interface, the display also switches back to the time of day display.



WARNING

Aladin® *ONE* does not display a No-Fly time. To prevent decompression sickness or death, you must wait at least 24 hours after your last dive before flying.

WARNING

If the <microbubble warning (NO DIVE)> is visible during the surface interval, the diver should not undertake another dive.

The segments in the **residual nitrogen bar graph** will gradually turn off as Aladin® *ONE* follows the offgassing of your tissues during your surface interval. There is a 1:1 equivalence in the meaning of the segments between diving and surface. Thus, on a repetitive dive the bar will resume from its status on the surface just prior to the dive. There are two exceptions however:

- the uppermost segment will stay lit until the desaturation time is completely extinguished. This is done to show that there is desaturation time left and that a dive started at this point will be logged as a repetitive dive. If the remaining desaturation time is very short, this segment could however at first disappear during the dive;
- during the 24 hours of an SOS-lock, all segments will stay on.

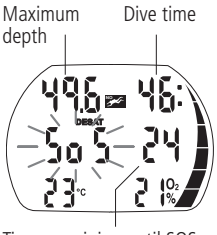
Microbubble warning

Microbubble warning

Through repetitive dives microbubbles accumulate in the lungs if the surface interval is not long enough. Ignoring decompression stops or ascending at an excessive rate can also lead to microbubbles in tissues. In order to reduce the risk of decompression sickness for repetitive dives, the surface interval should be planned long enough. If Aladin® *ONE* calculates that the formation of microbubbles occurs during the surface interval, it will advise a diver to extend the surface interval via the microbubble warning.

If the dive is made in spite of the microbubble warning, the diver must cope with a clearly shorter no-stop time or an extension of decompression. Also, the duration of the microbubble warning at the end of the dive can increase considerably.

6 SOS mode



Time remaining until SOS mode switches off automatically

Activation: automatic
If the diver remains above a depth of 0.8m (3 feet) for more than three minutes without observing a prescribed decompression, the computer will automatically switch into SOS mode after the dive.

While in SOS mode, the computer cannot be used for diving.

The SOS mode will be unlocked after 24 hours.

Diving within 48 hours after the end of an SOS mode will result in shorter no stop times or longer decompression stops.

The dive will be entered in the logbook with "SOS".

WARNING

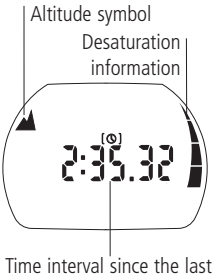
- Serious injury or death may result if a diver does not seek immediate treatment should any signs or symptoms of decompression sickness occur after a dive.
- Do not dive to treat symptoms of decompression sickness!
- Diving in SOS mode is extremely dangerous and you must assume full responsibility for such behaviour. UWATEC will assume no liability.

A diving accident can be analyzed at any time in the logbook and downloaded to a PC by means of the infrared interface (IrDA) and SmartTRAK software.

English

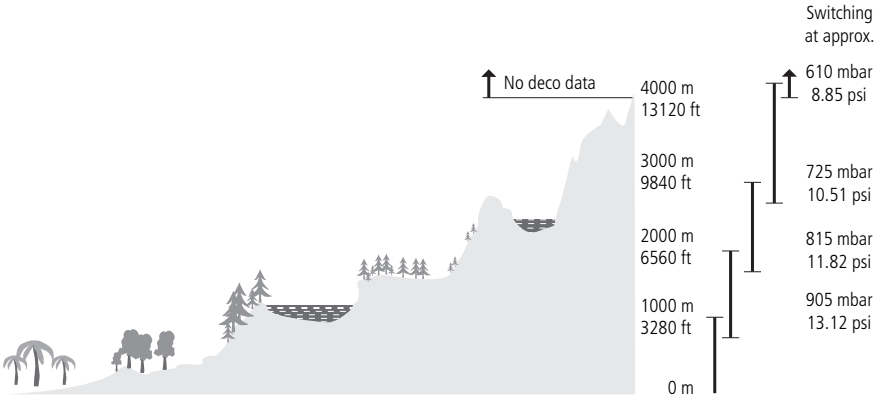
7 Diving in mountain lakes

7.1 Altitude ranges



Aladin® *ONE* measures the atmospheric pressure every 60 seconds even while the display is switched off. If the computer detects a sufficient increase in altitude, it switches on automatically and indicates the altitude symbol, the adaption time (desaturation time) as a bar graph and the time interval since the change in altitude class. Desaturation time refers to adaptation time at this altitude. If the dive starts within this adaptation time, Aladin® *ONE* treats it as a repetitive dive, since the body is offgassing.

Altitude is divided into five ranges, which are influenced by barometric pressure. That is why the defined altitude ranges overlap on their fringes. If a mountain lake is reached, the stylised mountain symbol lights up to indicate that the Aladin *ONE* is now in altitude mode, without differentiation between the various ranges. The actual altitude range can be seen after downloading Aladin *ONE* to a PC via SmartTRAK. Sea level to an altitude of approximately 1000m (3300 feet) is not indicated. In the following diagram, you can see the approximate breakdown of the altitude ranges:



7.2 Decompression dives in mountain lakes

Dive at altitude range 4:
- no deco data (autom. gauge mode)

In order to assure optimal decompression even at higher altitudes, the 3m (10 ft) decompression stage is divided into a 4 m (13 ft) stage and a 2 m (7 ft) stage in altitude ranges 1, 2 and 3. The prescribed decompression stop depths are, in sequence, 2m / 4m / 6m / 9m… (7 ft / 13 ft / 20 ft / 30 ft…).

If atmospheric pressure is below 620 mbar (8.99 psi) (altitude higher than 4100 m / 13450 ft above sea level), no decompression data is calculated and displayed (automatic gauge mode).

1 Technical information

Operating altitude: with decompression information: sea level up to approx. 4000 m (13120 ft); w/o decompression, automatic gauge mode (at any altitude)

Max. displayed depth: 120 m (395 ft), resolution between 0.8 m and 99.9 m: 0.1 m, >99.9 m: 1 m
The resolution in feet is always 1 foot.

WARNING

- Do not dive deeper than the limits given by the chosen fraction of oxygen (nitrogen narcosis, oxygen toxicity).
- Never dive deeper than your training qualification (experience) allows you.
- Always observe local dive depth restrictions.

Decompression calculation depth range: 0.8 to 120 m (3 to 395 ft)

Maximum environment pressure: 13 bar (189 psi)

Clock: Quartz clock, time, date, dive time display up to 199 minutes.

O_2% Mix: Adjustable between 21% O_2 (compressed air) and 50% O_2

Operating temperature: -10° to +50°C (14°F to 122°F).

Power supply: CR2450, recommended brands: PANASONIC, DURACELL, RENATA, ENERGIZER, SONY, VARTA.

Life of the battery: 2-3 years or 200-300 dives. Actual life of the battery depends on the quantity of dives per year and the length of the dives. In cold water the life of the battery is reduced. Not all CR2450 batteries are the same, and low quality batteries can have very short life.

2 Maintenance

Aladin® *ONE* is virtually maintenance free. All you need to do is to rinse it carefully with fresh water after each use and to have the batteries changed when needed ->21. To avoid possible problems with your Aladin® *ONE*, the following recommendations will help assure that it will give you years of trouble free service:

WARNING

- Avoid dropping or jarring your Aladin® *ONE*.
- Do not allow your Aladin® *ONE* to be exposed to direct, intense sunlight.
- Rinse your Aladin® *ONE* thoroughly with fresh water after each dive.
- Do not store your Aladin® *ONE* in a sealed container; make sure there is free ventilation.
- If there are problems with the water contacts, use soapy water to clean Aladin® *ONE* and dry it thoroughly. The surface of your Aladin® *ONE* housing can be treated with silicone grease. Do not apply grease to the water contacts!
- Do not clean Aladin® *ONE* with liquids containing solvent (apart from water).
- If the battery icon appears, replace the battery ->21.
- Diving with a weak battery: Aladin® *ONE* may stop working during the dive, service icon and error code "E3" or "E6" appear. Close the dive and replace the battery ->21.
- On the surface: if service icon and error code "E3" appear, replace the battery ->21. All error codes other than E3: Aladin® *ONE* must not be used for any further dives. Take your dive computer to an authorized SCUBAPRO UWATEC dealer.

2.1 Replacing the battery (Battery kit 06.201.919 includes battery and Teflon coated o-ring)

WARNING

Removing the battery clears all physiological data including saturation. This means that for a repetitive dive the computer will not compute correctly. Diving after replacing the battery when there is desaturation time left on the computer can lead to serious injury or death from decompression sickness. Change the battery only under these conditions:

- After a dive if you know you will not be diving, flying or going to higher altitude for the next 48 hours.
- Before a dive if there is no desaturation left on the computer.

The change must be made with particular care in order to prevent water from seeping in. The warranty does not cover damages due to an improper replacement of the battery.

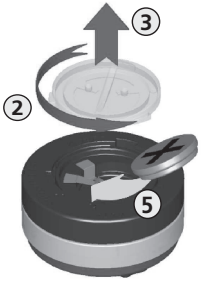
WARNING

Never touch the metal surface of the battery with bare fingers.
The two battery poles must never be short circuited.

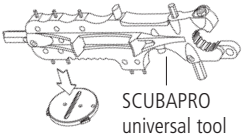
Procedure:
To replace the battery you need a coin or the SCUBAPRO universal tool and a clean cloth.

WARNING

- A leaking battery cap may lead to the destruction of Aladin® *ONE* by water seeping in or cause Aladin® *ONE* to switch off without prior notice.
- Always open the battery compartment in a dry and clean environment.
- Only open the battery compartment to replace the battery.



1. Dry Aladin® *ONE* with a soft towel.
2. Turn the battery cap with a coin or with the SCUBAPRO universal tool.
3. Remove the battery cap.



4. Remove the o-ring carefully. Do not damage the sealing surfaces.
5. Remove the battery. Do not touch the contacts.

Protect the environment and dispose the battery properly.

WARNING

If you notice traces of seeping water, damages, or other defects on the o-ring, do not use Aladin® *ONE* for further dives. Take it to an authorized SCUBAPRO UWATEC dealer for check and repair.

6. Always insert a new o-ring when you replace the battery and dispose the old o-ring. Make sure that the new o-ring is in perfect condition, and that o-ring, o-ring groove and the sealing surfaces are free of dust and dirt.
   If necessary, clean the parts with a soft cloth. Fit the o-ring in the o-ring groove of the battery cap.

WARNING

7. Use only an original UWATEC o-ring PN 06.201.610. This o-ring is Teflon coated and does not require additional lubrication.
8. Do not lubricate the o-ring as the lubricant will chemically attack the battery cap.

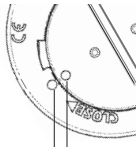
WARNING

9. Check the proper polarity of the battery. Aladin® *ONE* can be damaged if you do not insert the battery correctly.
   Insert the new battery, with "+" pointing outwards, into the battery compartment.

After battery replacement Aladin® *ONE* will perform an automatic test (8 sec.) and gives a short beep when the test is done.

WARNING

10. The battery cap can be installed with a ±120° offset. The alignment circles are there to ensure proper positioning of the cap. If the rotation is stopped before alignment, watertightness may not be ensured. If the rotation is forced beyond the alignment, the cap may break. Damage to Aladin® *ONE* due to improper placement of the battery cap is not covered by warranty.



Push the battery cap firmly down and turn it clockwise until the two circles are aligned.

11. Check Aladin® *ONE* by switching on ->12 .

3 Warranty

The warranty only covers dive computers which have been bought from an authorised SCUBAPRO UWATEC retailer. The warranty is given for a period of two years.
Repairs or replacements during the warranty period do not increase the warranty period.
In order to put forward a warranty claim: send the dive computer together with a dated receipt of the purchase to your authorised retailer or an authorised servicing point.
UWATEC reserves the right to determine the merits of a warranty claim and to determine whether the computer will be repaired or replaced.

Excluded are faults or defects due to:
- excessive wear and tear;
- exterior influences, e.g. transport damage, damage due to bumping and hitting, influences of weather or other natural phenomena;
- servicing, repairs or the opening of the dive computer by anybody not authorised by the manufacturer;
- pressure tests which do not take place in water;
- diving accidents;
- improper placement of the battery cap.

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SCUBAPRO UWATEC Americas
(USA/Canada/Latin America)
1166 Fesler Street
El Cajon, CA 92020 USA
t: +1 619 402 1023
f: +1 619 402 1554
www.scubapro.com

SCUBAPRO UWATEC Asia Pacific
1208 Block A, MP Industrial Center
18 Ka Yip St.
Chai Wan Hong Kong
t: +852 2556 7338
f: +852 2898 9872
www.scubaproasiapacific.com

SCUBAPRO UWATEC Australia
Unit 21, 380 Eastern Valley Way
Chatswood, N.S.W. 2067
t: +61 2 9417 1011
f: +61 2 9417 1044
www.scubapro.com.au

SCUBAPRO UWATEC Deutschland
(Germany / Austria / Scandinavia)
Taucherausrüstungen GmbH
Rheinvogtstraße 17
79713 Bad Säckingen-Wallbach
t: +49 (0) 7761 921050
f: +49 (0) 7761 921051
www.scubapro-uwatec.de

SCUBAPRO UWATEC Italy
Via G.Latiro 45
I-16039 Sestri Levante (GE)
t: +39 0185 482 321
f: +39 0185 459 122
www.scubapro-uwatec.it

SCUBAPRO UWATEC Japan
4-2 Marina Plaza 5F
Kanazawa-Ku
Yokohama
Japan
t: +81 45 775 2288
f: +81 45 775 4420
www.scubapro.co.jp

SCUBAPRO UWATEC France
Les Terriers Nord
175 Allée Belle Vue
F-06600 Antibes
t: +33 (0) 4 92 91 30 30
f: +33 (0) 4 92 91 30 31
www.scubapro-uwatec.fr

SCUBAPRO UWATEC Benelux
Avenue des Arts, 10/11 Bte 13
1210 Bruxelles
t: +32 (0) 2 250 37 10
f: +32 (0) 2 250 37 11
www.scubapro-uwatec.com

SCUBAPRO UWATEC España
Pere IV, nº359, 2°
08020- Barcelona
t: +34 93 303 55 50
f: +34 93 266 45 05
www.scubapro-uwatec.es

SCUBAPRO UWATEC U.K.
Vickers Business Centre
Priestley Road
Basingstoke, Hampshire RG24 9NP
England
t: +44 0 1256 812 636
f: +44 0 1256 812 646
www.scubapro.co.uk

SCUBAPRO UWATEC Switzerland
Oberwilerstrasse 16
CH-8444 Henggart
t: +41 (0) 52 3 16 27 21
f: +41 (0) 52 3 16 28 67
www.scubapro-uwatec.de

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